Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	32816	(H2 or H?sub$2 or hydrogen) same (oxygen or O2 or O?sub$2) same catalyst	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/11/09 18:10
L7	12146	(H2 or H?sub$2 or hydrogen) same (oxygen or O2 or O?sub$2) same catalyst same (vapor or moisture or water)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/11/09 18:11
L8	9333	7 and (chamber or reactor or vessel or furnace or apparatus)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/11/09 18:12
L9	6264	8 and (oxidat$6 or oxidiz$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/11/09 18:13
L10	2780	9 and (semiconductor or Si or silicon or SiO2 or SiO?sub$2 or IC or (integrated adj circuit))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/11/09 18:14
L11	1621	10 and (@ad<="19970305" or @rlad<="19970305")	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2004/11/09 18:17

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     FILE 'REGISTRY' ENTERED AT 12:44:52 ON 10 NOV 2004
L1           28 SEA ABB=ON  PLU=ON  NITROGEN/CN OR N2/MF
L2            1 SEA ABB=ON  PLU=ON  SILICA/CN
L3           42 SEA ABB=ON  PLU=ON  WATER/CN OR STEAM/CN OR H2O/MF
L4          257 SEA ABB=ON  PLU=ON  STEAM

     FILE 'HCAPLUS' ENTERED AT 12:45:51 ON 10 NOV 2004
L5        536157 SEA ABB=ON  PLU=ON  L3 OR STEAM
L6         14261 SEA ABB=ON  PLU=ON  L1 AND L5
L7           557 SEA ABB=ON  PLU=ON  L2 AND L6
L8         46551 SEA ABB=ON  PLU=ON  THERMAL###(2A)OXID#################
L9            34 SEA ABB=ON  PLU=ON  L7 AND L8
L10            3 SEA ABB=ON  PLU=ON  L9 AND PURG######
L11            2 SEA ABB=ON  PLU=ON  L9 AND (CHAMBER OR REACTOR OR VESSEL OR
                 SINGLE WAFER)
L12            4 SEA ABB=ON  PLU=ON  (L10 OR L11)
                 D ALL HITSTR TOT

     FILE 'STNGUIDE' ENTERED AT 12:47:15 ON 10 NOV 2004

     FILE 'HCAPLUS' ENTERED AT 12:49:50 ON 10 NOV 2004
L13           14 SEA ABB=ON  PLU=ON  L7 AND L1(L)(PURG####### OR REACTOR OR
                 VESSEL OR CHAMBER)
L14           14 SEA ABB=ON  PLU=ON  L13 NOT L12
                 D ALL HITSTR TOT

     FILE 'STNGUIDE' ENTERED AT 12:50:22 ON 10 NOV 2004

     FILE 'INPADOC, JAPIO, WPIX' ENTERED AT 12:51:56 ON 10 NOV 2004
L15            3 SEA ABB=ON  PLU=ON  JP07297181/PN
                 D BRO
                 D MAX 2-3

     FILE 'REGISTRY' ENTERED AT 12:54:34 ON 10 NOV 2004
L16           19 SEA ABB=ON  PLU=ON  HYDROGEN/CN OR H2/MF
L17           27 SEA ABB=ON  PLU=ON  OXYGEN/CN OR O2/MF

     FILE 'HCAPLUS' ENTERED AT 12:55:44 ON 10 NOV 2004
L18         6960 SEA ABB=ON  PLU=ON  L16 AND L17 AND L3
L19         1350 SEA ABB=ON  PLU=ON  L18 AND CATALY#################
L20           10 SEA ABB=ON  PLU=ON  L7 AND (SMOOTH####### OR ROUGH########)
                 D ALL HITSTR TOT
L21          169 SEA ABB=ON  PLU=ON  L19 AND L1
L22            1 SEA ABB=ON  PLU=ON  L21 AND (SMOOTH####### OR ROUGH########)
L23           20 SEA ABB=ON  PLU=ON  L21 AND (L2 OR SILICA OR SIO2 OR (SI OR
                 SILICON)(W)DIOXIDE)
                 D ALL HITSTR TOT

     FILE 'STNGUIDE' ENTERED AT 13:00:48 ON 10 NOV 2004

     FILE 'HCAPLUS' ENTERED AT 13:03:24 ON 10 NOV 2004
L24         5709 SEA ABB=ON  PLU=ON  L16 AND L17 AND CATALY###########

     FILE 'REGISTRY' ENTERED AT 13:03:59 ON 10 NOV 2004
L25           48 SEA ABB=ON  PLU=ON  O2SI/MF

     FILE 'HCAPLUS' ENTERED AT 13:04:31 ON 10 NOV 2004
L26          123 SEA ABB=ON  PLU=ON  (L2 OR L25)(L)PREP
L27            0 SEA ABB=ON  PLU=ON  L24 AND L26
L28           57 SEA ABB=ON  PLU=ON  L24 AND (L2 OR L25)(L)(THERMAL### OR
                 OXIDAT#######)
L29            9 SEA ABB=ON  PLU=ON  L24 AND (L2 OR L25)(L)(THERMAL### OR
                 OXIDI#######)
L30           57 SEA ABB=ON  PLU=ON  (L28 OR L29)
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L31          24 SEA ABB=ON  PLU=ON  L30 AND (L3 OR L4 OR STEAM OR WATER OR
                H2O)
                D ALL HITSTR TOT

     FILE 'STNGUIDE' ENTERED AT 13:06:34 ON 10 NOV 2004
L32           0 SEA ABB=ON  PLU=ON  L16 AND L17

     FILE 'HCAPLUS' ENTERED AT 13:08:23 ON 10 NOV 2004
L33       38080 SEA ABB=ON  PLU=ON  L16 AND L17
L34           0 SEA ABB=ON  PLU=ON  L33 AND L26
L35           0 SEA ABB=ON  PLU=ON  L33 AND L26(L)OXID########
L36         358 SEA ABB=ON  PLU=ON  L33 AND (L2 OR L25)(L)OXID########
L37         110 SEA ABB=ON  PLU=ON  L36 AND (L3 OR L4 OR STEAM OR WATER OR
                H2O)
L38          13 SEA ABB=ON  PLU=ON  L37 AND THERMAL##(2A)OXID###############
                D ALL HITSTR TOT

     FILE 'STNGUIDE' ENTERED AT 13:10:47 ON 10 NOV 2004

     FILE 'STNGUIDE' ENTERED AT 13:12:20 ON 10 NOV 2004

     FILE 'REGISTRY' ENTERED AT 13:13:30 ON 10 NOV 2004
L39           2 SEA ABB=ON  PLU=ON  PLATINUM/CN OR NICKEL/CN

     FILE 'HCAPLUS' ENTERED AT 13:13:44 ON 10 NOV 2004
L40      406463 SEA ABB=ON  PLU=ON  L39
L41        4491 SEA ABB=ON  PLU=ON  L16 AND L17 AND L40
L42          30 SEA ABB=ON  PLU=ON  L41 AND L8
L43         444 SEA ABB=ON  PLU=ON  L41 AND (L2 OR SILICA OR SIO2 OR (SI OR
                SILICON)(W)DIOXIDE)
L44           8 SEA ABB=ON  PLU=ON  L42 AND L43
L45           0 SEA ABB=ON  PLU=ON  (L42 OR L43) AND SINGLE WAFER
L46          60 SEA ABB=ON  PLU=ON  (L42 OR L43) AND SEMICONDUCT########
L47          92 SEA ABB=ON  PLU=ON  (L42 OR L43) AND L3
L48          13 SEA ABB=ON  PLU=ON  L46 AND L47
L49          21 SEA ABB=ON  PLU=ON  L44 OR L48
                D ALL HITSTR TOT
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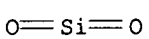
L20 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:179271 HCAPLUS
DN 120:179271
ED Entered STN: 02 Apr 1994
TI Oxide growth in cluster tools
AU Granneman, E.H.A.
CS DIMES, Delft Univ. Technol., Delft, Neth.
SO Microelectronic Engineering (1993), 22(1-4), 11-20
CODEN: MIENEF; ISSN: 0167-9317
DT Journal
LA English
CC 76-3 (Electric Phenomena)
AB Wafer processing systems in which wafer pre-clean, dry oxidation and polysilicon deposition processes are integrated in a vacuum system are very useful to grow thin oxide films with (sub-)monolayer control. Most attention is paid to batch-type cluster systems. The wafer pre-clean is based on vapor-phase HF etch processes. The background H2O, O2 concns. appear to play a major role in such systems. By admixing a small amount of O to the 100 Pa pure N ambient, surface **roughening** can be prevented. The capabilities of such systems are illustrated by showing that Si-Si contacts with low contact resistance, poly-emitter structures with tunable, sharply-peaked gain distributions, and poly-gate structures with high elec. breakdown fields can be produced. Life tests in which the poly-gate capacitors are current-stressed indicate that HF vapor pre-cleans lead to a lower failure rate at early times than wet HF pre-cleans. However, the charge-to-breakdown (Qbd) of HF vapor etched samples is **roughly** 10% lower than that of those etched in wet HF solns. This might be caused by a somewhat larger surface **roughening** in the HF vapor case.
ST oxide growth silicon wafer processing
IT Electric capacitors
(poly-gate MOS)
IT **7631-86-9**, Silicon dioxide, properties
RL: PRP (Properties)
(growth of, in polysilicon deposition processes)
IT 7664-39-3, Hydrogen fluoride, uses
RL: USES (Uses)
(in silicon wafer processing)
IT 7440-21-3, Silicon, reactions
RL: PRP (Properties)
(oxide growth on polycryst., in wafer processing)
IT **7732-18-5**, Water, uses 7782-44-7, Oxygen (O2), uses
RL: USES (Uses)
(role of, in oxide growth in wafer processing)
IT **7727-37-9**, Nitrogen, uses
RL: USES (Uses)
(surface **roughening** prevention by, during silicon wafer processing)
IT **7631-86-9**, Silicon dioxide, properties
RL: PRP (Properties)
(growth of, in polysilicon deposition processes)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **7732-18-5**, Water, uses
RL: USES (Uses)
(role of, in oxide growth in wafer processing)
RN 7732-18-5 HCAPLUS
CN Water (8CI, 9CI) (CA INDEX NAME)

H_2O

IT **7727-37-9**, Nitrogen, uses
RL: USES (Uses)
(surface **roughening** prevention by, during silicon wafer processing)
RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

L15 ANSWER 2 OF 3 JAPIO (C) 2004 JPO on STN
AN 1995-297181 JAPIO
TI METHOD AND APPARATUS FOR THERMAL OXIDATION TREATMENT
IN KIMURA HIDEKI
PA SONY CORP
PI **JP 07297181** A 19951110 Heisei
AI JP 1994-81612 (JP06081612 Heisei) 19940420
PRAI JP 1994-81612 19940420
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1995
IC ICM H01L021-316
ICS H01L021-22; H01L021-26; H01L021-31; H01L021-324
AB PURPOSE: To eliminate the problem of dew condensation and to perform a thermal oxidation treatment using a treatment gas which contains misture even when a thermal oxidation treatment apparatus which is provided with an inner tube and with an outer tube is used.
CONSTITUTION: A thermal oxidation treatment apparatus is provided with an inner tube 4 constituting a treatment chamber which oxidizes and treats a semiconductor substrate 2 to be treated, with a heating mechanism 1 which heats the treatment chamber and, in addition, with an outer tube 6 as an outer frame. In the thermal oxidation treatment apparatus, the temperature of the outer tube is controlled by a temperature control medium 8 such as a liquid at a boiling point of 100°C or higher or a gas which is stable at 100 to 300°C so as to prevent overheating and to prevent the dew condensation of the inner tube.

L38 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1986:525503 HCAPLUS
DN 105:125503
ED Entered STN: 03 Oct 1986
TI Semiconductor processing facility for providing an enhanced oxidation rate
IN Bean, Kenneth E.; Havemann, Robert H.; Lane, Andrew
PA Texas Instruments Inc., USA
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM B05D005-12
ICS C23C016-00
NCL 427093000
CC 76-3 (Electric Phenomena)
FAN.CNT 1

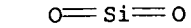
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4599247	A	19860708	US 1985-688771	19850104
	JP 61216332	A2	19860926	JP 1985-299613	19851227
PRAI	US 1985-688771		19850104		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 4599247	ICM	B05D005-12
	ICS	C23C016-00
	NCL	427093000

AB A method for forming a **thermal oxide** layer on a Si substrate includes placing the substrate into a quartz tube capable of containing a high pressure (e.g., 1-20 atm) atmospheric, out-gassing and hermetically sealing the tube, heating the tube to a predetd. temperature [e.g., 1000°-(30° times a selected pressure in atm)] above the b.p. of **H2O** at the selected pressure, and introducing **steam** into the tube at the selected pressure (e.g., .apprx.3-10 atm) to form the oxide layer. The **steam** may be injected directly into the tube, or it may be produced by dripping **H2O** or injecting H2 and O2 into the tube. Assemblies formed from quartz, SiC, Si, or combinations of these may be placed in the tube. The method allows the growth of **thermal oxide** layers to be carried out at high pressures (and therefore at low temps. and/or for short periods compared to oxidation at atmospheric pressure) using conventional furnaces.
ST high pressure **thermal oxidn** silicon; quartz tube high pressure oxidn
IT **Steam**
(in oxidation of silicon in high-pressure apparatus)
IT 409-21-2, properties
RL: PRP (Properties)
(assembly of, in high-pressure apparatus for **thermal oxidn** . of silicon)
IT 11126-22-0P
RL: PNU (Preparation, unclassified); PREP (Preparation)
(high-pressure apparatus for formation of, on silicon substrates by **thermal oxidn**.)
IT **14808-60-7**, uses and miscellaneous
RL: USES (Uses)
(high-pressure tube of, in **thermal oxidn**. of silicon)
IT **7732-18-5**, vapor
RL: USES (Uses)
(in oxidation of silicon in high-pressure apparatus)
IT **7782-44-7**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrogen for **steam** in high-pressure apparatus for **thermal oxidn**. of silicon)

IT **1333-74-0**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oxygen for **steam** in high-pressure apparatus for **thermal oxidn.** of silicon)
IT 7440-21-3, reactions
RL: TEM (Technical or engineered material use); USES (Uses)
(**thermal oxidn.** layer formation on, high-pressure apparatus for)
IT **14808-60-7**, uses and miscellaneous
RL: USES (Uses)
(high-pressure tube of, in **thermal oxidn.** of silicon)
RN 14808-60-7 HCAPLUS
CN Quartz (SiO2) (9CI) (CA INDEX NAME)



IT **7732-18-5**, vapor
RL: USES (Uses)
(in oxidation of silicon in high-pressure apparatus)
RN 7732-18-5 HCAPLUS
CN Water (8CI, 9CI) (CA INDEX NAME)

IT **7782-44-7**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrogen for **steam** in high-pressure apparatus for **thermal oxidn.** of silicon)
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

IT **1333-74-0**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oxygen for **steam** in high-pressure apparatus for **thermal oxidn.** of silicon)
RN 1333-74-0 HCAPLUS
CN Hydrogen (8CI, 9CI) (CA INDEX NAME)

L38 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:638189 HCAPLUS
DN 127:282133
ED Entered STN: 08 Oct 1997
TI Oxidation behavior of a SiC-based fiber
AU Viricelle, J. P.; Bahloul-Hourlier, D.; Goursat, P.
CS LMCTS, Univ. Limoges, Limoges, F-87060, Fr.
SO Key Engineering Materials (1997), 127-131(Pt. 1, Ceramic and Metal Matrix Composites, Pt. 1), 203-210
CODEN: KEMAEY; ISSN: 1013-9826
PB Trans Tech
DT Journal
LA English
CC 57-2 (Ceramics)
AB Reported is the oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet O2. The fibers consisted of 3 phases: SiC nanocrystals, SiCxOy amorphous continuum, and free C along with residual H which formed **water** vapor on oxidation and thus influenced the kinetics. The influence of **water** vapor was significant at 0-0.75 kPa. The effect of residual H was minimized by thermal pretreatment of the fibers in He at 1250°. Under these conditions, a diffusion-controlled regime was established after a transient period, which could not be modeled by the classical linear-parabolic law characteristic of a mixed reaction-diffusion regime. The weak apparent activation energy obtained in dry O2 (85 kJ/mol) for the diffusion mechanism, compared to the literature values (120 kJ/mol) for O2 permeation through amorphous silica indicated that this process was not the only limiting step or that silica had a different texture, depending on the nature of the substrate.
ST Nicalon fiber **oxidn** kinetics **thermal** stability; silicon carbide ceramic fiber oxidn kinetics
IT Synthetic fibers
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(ceramic; oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet O2)
IT Ceramics
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(fibers; oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet O2)
IT Diffusion activation energy
(for O2 permeation through amorphous silica at Nicalon fibers)
IT Diffusion
(limiting diffusion mechanism in oxidation of Nicalon fibers at 900-1200° in O2)
IT Oxidation kinetics
(oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet O2)
IT Synthetic fibers
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(silicon carbide; oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet O2)
IT **7732-18-5**, **Water**, processes
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(effect on oxidation kinetics of Nicalon fibers at 900-1200° in O2)
IT **7631-86-9**, Silica, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(formation by **oxidn.** of Nicalon fibers at 900-1200° in O2)
IT **7782-44-7**, Oxygen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet

O2)
IT 409-21-2, Silicon carbide, processes . 7440-44-0, Carbon, processes
39345-87-4, Silicon carbide oxide
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(oxidation kinetics of Nicalon fibers consisting of SiC nanocrystals, amorphous SiCxOy, and free C at 900-1200° in dry and wet O2)
IT **1333-74-0**, Hydrogen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(residual; effect on oxidation kinetics of Nicalon fibers at 900-1200° in O2 by formation of **water**)
IT **7732-18-5**, **Water**, processes
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(effect on oxidation kinetics of Nicalon fibers at 900-1200° in O2)
RN 7732-18-5 HCAPLUS
CN Water (8CI, 9CI) (CA INDEX NAME)

H_2O

IT **7631-86-9**, Silica, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(formation by **oxidn**. of Nicalon fibers at 900-1200° in O2)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O═Si═O

IT **7782-44-7**, Oxygen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(oxidation kinetics of Nicalon fibers at 900-1200° in dry and wet O2)
RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O═O

IT **1333-74-0**, Hydrogen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(residual; effect on oxidation kinetics of Nicalon fibers at 900-1200° in O2 by formation of **water**)
RN 1333-74-0 HCAPLUS
CN Hydrogen (8CI, 9CI) (CA INDEX NAME)

H—H

L49 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:656053 HCAPLUS
DN 129:332568
ED Entered STN: 16 Oct 1998
TI Reaction furnace for generation of water vapor.
IN Oomi, Tadahiro; Kawada, Koji; Tanabe, Yoshikazu; Ikeda, Shinichi; Morimoto, Akihiro; Minamiru, Yukio
PA Fujikin K. K., Japan; Hitachi, Ltd.
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L021-31
CC 47-3 (Apparatus and Plant Equipment)
Section cross-reference(s): 56, 76
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10270437	A2	19981009	JP 1997-74130	19970326
	JP 3393031	B2	20030407		
	TW 440542	B	20010616	TW 1998-87116013	19980925
PRAI	JP 1997-74130	A	19970326		
	JP 1997-109989	A	19970428		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10270437	ICM	H01L021-31

AB The title apparatus includes 2 furnace members (e.g., SUS316L) combined to form a furnace body having an inner space, a gas supply path on 1 furnace member for supplying feed gases (i.e., H2 and O2) into the inner space, an outlet path on the other furnace member for discharging formed water vapor (moisture), an inlet side reflector having a wall-perforated cylindrical casing and a reflection plate concentrically arranged at the inner side of the gas supply path, a filter arranged in the inner space, an outlet side reflector having a wall-perforated cylindrical casing, a reflection plate and a diffusion filter concentrically arranged at the inner side of the outlet path, and Pt coatings (with TiN barrier coatings) on the inner surfaces of the furnace members. The apparatus is mainly used for forming **SiO2** films on Si substrates by water vapor oxidation method in **semiconductor** industry.

IT **7440-06-4**, Platinum, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(coatings; reaction furnace for generation of water vapor for oxidation of silicon substrates)
RN 7440-06-4 HCAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

IT **7631-86-9P, Silica**, uses
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(films; reaction furnace for generation of water vapor for oxidation of silicon substrates)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT **1333-74-0**, Hydrogen, reactions **7782-44-7**, Oxygen,

reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction furnace for generation of water vapor for oxidation of silicon substrates)
RN 1333-74-0 HCAPLUS
CN Hydrogen (8CI, 9CI) (CA INDEX NAME)

H—H

RN 7782-44-7 HCAPLUS
CN Oxygen (8CI, 9CI) (CA INDEX NAME)

O═O

IT **7732-18-5P**, Water, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(vapor; reaction furnace for generation of water vapor for oxidation of silicon substrates)
RN 7732-18-5 HCAPLUS
CN Water (8CI, 9CI) (CA INDEX NAME)

H_2O

L15 ANSWER 3 OF 3 WPIX COPYRIGHT 2004 THE THOMSON CORP on STN
AN 1996-025421 [03] WPIX
DNN N1996-021556 DNC C1996-008417
TI Heat oxidation process - involves using temperature control medium to control temperature of outer tube.
DC L03 U11
PA (SONY) SONY CORP
CYC 1
PI JP 07297181 A 19951110 (199603)* 6 H01L021-316 <--
ADT JP 07297181 A JP 1994-81612 19940420
PRAI JP 1994-81612 19940420
IC ICM H01L021-316
ICS H01L021-22; H01L021-26; H01L021-31; H01L021-324
AB JP 07297181 A UPAB: 19960122
The process uses an appts. which comprises an inner tube (4). The inner tube includes a processing chamber which performs heat oxidation of a semiconductor substrate (2). A heating mechanism (1) such as a halogen lamp, heats the processing chamber. An outer tube (6) is provided with an external frame. The temperature of the outer tube is controlled by a temperature controlling medium (8) comprising coolant such as stable gas, whose temperature is about 100 deg.C or 100-300 deg.C.
USE/ADVANTAGE - Process is used in formation of heat oxide film for silicon semiconductor devices, preventing overheating and condensation of dew in inner tube.
Dwg.1/2
FS CPI EPI
FA AB; GI
MC CPI: L04-C12A; L04-C16; L04-D05
EPI: U11-C05B1

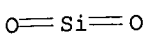
L12 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:38767 HCAPLUS
DN 124:74059
ED Entered STN: 20 Jan 1996
TI Manufacture of **thermal oxides** on semiconductor device elements and apparatus therefor
IN Kimura, Hideki
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01L021-316
ICS H01L021-22; H01L021-26; H01L021-31; H01L021-324
CC 76-3 (Electric Phenomena)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07297181	A2	19951110	JP 1994-81612	19940420
PRAI JP 1994-81612		19940420		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 07297181	ICM	H01L021-316
	ICS	H01L021-22; H01L021-26; H01L021-31; H01L021-324

AB The manufacturing process employs: a quartz inner capsule containing a semiconductor substrate; a port for a **purging** N2; a port for a mixture of O2 and H2O for forming the oxide layer; and a stainless steel outer capsule containing heat lamps, where the wall of the outer capsule contains a heating pipe for passing through a liquid (b.p. > 100) or a gas (stable at 100-300°).
ST oxide wet formation silicon wafer manufg
IT Semiconductor devices
(manufacture of **thermal oxides** on semiconductor device elements)
IT 14808-60-7, Quartz, uses
RL: DEV (Device component use); USES (Uses)
(manufacture of **thermal oxides** on semiconductor device elements)
IT 7440-21-3, Silicon, uses **7631-86-9**, Silica, uses **7727-37-9**, Nitrogen, uses **7732-18-5**, Water, uses 7782-44-7, Oxygen, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(manufacture of **thermal oxides** on semiconductor device elements)
IT **7631-86-9**, Silica, uses **7727-37-9**, Nitrogen, uses **7732-18-5**, Water, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(manufacture of **thermal oxides** on semiconductor device elements)
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7727-37-9 HCAPLUS
CN Nitrogen (8CI, 9CI) (CA INDEX NAME)

RN 7732-18-5 HCAPLUS
CN Water (8CI, 9CI) (CA INDEX NAME)

H_2O